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Online Learning: Factors that Influence Undergraduate Students' Readiness

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Abstract

This study examines the factors influencing undergraduate students' readiness for online learning. The unit of analysis was undergraduate students from the Higher Learning Institution X in Selangor. The online questionnaire was distributed and answered by 86 respondents. This questionnaire is divided into two main sections: demographic profiles and determinant factors to online learning. This study analysed the data using Statistical Package for Social Sciences (SPSS) Version 26. The output derived from SPSS is descriptive statistics to describe the characteristics of the sample, followed by multiple regression analysis. The significance of this study is to highlight the concern of the Ministry of Higher Education (MOHE) on readiness factor/s that could lead to the effectiveness of online learning in tertiary education in Malaysia.

Keywords: Online Learning Readiness, Accessibility, Communication, Motivation, Self-Directed Learning

Introduction

Since the early days, education has been held by direct communication that requires a physical place to conduct the learning session. The needs for classrooms, tables, chairs and whiteboards are crucial to ensure that the learning session can be conducted efficiently. As time went by, the reliance on face-to-face communication was slowly reduced since the advancement of Information and Communication Technologies (ICT) offers a medium for pedagogical. Since then, many high education institutions have developed a more comprehensive learning approach by implementing online learning. According to a study by Clark and Mayer (2016), online learning is the process of guidance that has been delivered via digital medium to facilitate learning. This approach allows students and lecturers to customize their learning experiences. Besides, it is to tackle the problems of having limited classrooms

and time to hold a learning session. With online learning, lecturers can hold the learning session live online or easily record their lectures to be viewed by the students.
Nevertheless, online learning is nothing special if the anticipating and readiness of the students for online learning are low. According to Hall (2011), cited by Bovermann et al (2018), online learning always deal with low student determination. Therefore, conducive online learning environments must be designed wisely to ensure students engage with the materials and learning methods. Students must prepare themselves first before enrolling in online learning. The input to e-learning can be measured by readiness and expectations, while the output can be measured through satisfaction levels, which are deemed crucial variables to consider for any upcoming e-learning environment changes (Ilgaz and Gulbahar, 2015).

The readiness of students is the key determinant to success in online learning. Since online learning needs the existence of the internet as a mediator, it also needs the existence of gadgets to use the internet. It will influence their readiness without adequate and relevant gadgets and a stable internet connection. Online learning without modern gadgets is impossible. According to Bayanova et al (2019), gadgets give tons of new features intended to improve the learning process, which means they are essential for students to participate in online learning. According to Rob (2021), if students want to be efficient and successful, they must get all the mandatory gadgets. Besides that, students' preferences and students' confidence are also essential measurements to acknowledge whether they are ready or not for online learning. These measurements aspect can determine the student readiness influenced their satisfaction. It is crucial to consider these measurements to ensure that online learning can be held effectively. The online learning environment and its components also directly influenced students' readiness. If none of these dimensions is well presented and engaged by the students, it will significantly lead to tremendous obstacles for them, especially for their academic performance. Therefore, our study tried to pin down the factors influencing undergraduate students from one Higher Learning Institution X in Selangor, Malaysia, regarding their readiness for online learning.

The current breakout of coronavirus disease (COVID-19) has made all human activities more difficult. According to Dhawan (2020), Covid-19 has forced universities to switch from traditional to online learning. In response to the pandemic, our country, the Ministry of Higher Education (MOHE), has devised a plan to conduct online learning. Landau (2020) reported that decision made by MOHE that all educational programmes in universities need to switch to online platforms until current. Because of the decision, online learning was no longer an option but a must. To comply with it, all institutions have created a circular regarding implementing online distance learning. Because of that, students had no other choice; thus, they needed to accept the new learning environment. The 360-degree change makes some students unprepared for it (Blauw, 2021). According to Baticulon et al (2021), the most widely recognised issues were trouble adjusting learning styles, satisfying obligations at home and lacking communication between lecturers and students. Furthermore, in a study by Rafidi (2020), learning from home can be disturbing and sometimes make them feel guilty for prioritising learning sessions over family commitment. Apart from that, this study is developed since there is a lack of study for the targeted respondents.

Review of Selected Literatures

Students' Readiness for Online Learning

According to (Widodo et al., 2020), online learning is one of the best alternatives to learning amid the pandemic COVID-19. Readiness in e-learning refers to the condition where students prepare their minds and engage e-learning environment. It was essential to ensure that students could engage in a learning environment that is so much different from the traditional learning method. Since then, the student's readiness for online learning has been crucial to ensure they can adapt to the new norm. Students' emotional intelligent levels were measured to know whether there was a significant relationship between the students' readiness for online learning. It was vital for them to be mentally ready to pursue their study in the online learning environment. As discussed in their study, individuals with a solid social skills sub-dimension of emotional intelligence had a high level of online learning readiness. Emotional intelligence is a method for defining and establishing a person's emotions. It has been reported that the characteristics of personality such as empathy, social competence and skills help individuals cope successfully with the incoming pressure and demand. Without being emotionally ready, it is believed that students will face difficulties in learning online. For example, the student should be self-aware, know how to handle stress, solve problems, control emotion regulation, and protect against the negative stress that intervenes with the ability of the individual to think clearly. In brief, emotional intelligence was one of the critical determinants in measuring student readiness for online learning.

A study by Forson and Vuopala (2019) aimed to examine students' readiness for online learning since there was a tendency to expand online learning, but issues of students' readiness for online learning have been ignored. Technological skill was one of the critical variables to undermine the students' readiness for online learning. The outcome of this study explained that ICT skills are the highest contribution to describing students' readiness for online learning. Students should have the skills in ICT to ensure they can adapt to the online learning environment. It is essential because online learning deals with gadgets and the internet; thus, skills in accessing the learning materials, participating in the online class and online discussions, and communicating with friends and lecturers are required criteria for the student. In short, this study demonstrated that students are enthusiastic about online learning. Students were also willing to accept technology and digital implementation and move to an online learning style of education.

According to Doe et al (2017), it is crucial to measure the students' readiness for online learning, which helps forecast their success. Student engagement in online learning helped reduce poor achievement, isolation, and attrition from their study. If students are well engaged and adapted to the concept of online learning, it will make them ready to learn and ensure the effectiveness of online learning. Furthermore, they must be ready because it could influence their motivation to learn and academic performance. Their study was carried out on 104 participants by distributing a questionnaire that consisted of 16 items. The study's findings reveal that the students can set goals and the due date for themselves. However, the students do not believe that they will acquire the same educational value from online classes. Chung et al (2020) have conducted a study about assessing online learning readiness among students at UiTM Sarawak. Technological advancement has transformed the nature of educational institutions in which online learning was adapted to provide the best platform in line with the current situation. Furthermore, it is to analyse what are the problems that the students were facing during online learning. The study was participated by 97 students who at least enrolled in one online learning course. Possible risks include a lack of control

perception, poor choices, and a high cognitive load on learners' processing resources due to the amount of choice offered.
Meanwhile, in a study by Kalkan (2020), students' readiness for online learning was measured among 322 students. Measuring the online learning readiness of the student's university is crucial to ensure that they can quickly be adjusted to the new teaching techniques in the current COVID-19 pandemic. This is to ensure that they are satisfied with the new learning environment. Besides that, it is to measure their determination and perception. This measurement will help students and lecturers create a conducive learning activity, thus enabling them to adapt to online learning.

For this study, the main focuses are to determine the influencing factors among students towards their readiness for online learning through identified factors: accessibility, communication, motivation and self-directed learning.

Students' Accessibility
According to Aboagye et al (2020), accessibility is the most significant problem that students face in a comprehensive online learning setting. Accessibility difficulties, including the internet connectivity and the use of compatible cell phones and computers, have been highlighted as causing several student problems. These problems that have been mentioned would directly affect the readiness of all students during their online learning. This study also highlighted that online learning also deals with issues such as lecturers having difficulty teaching online and students having difficulty assessing course materials—both problems related to internet connectivity. Internet connectivity is also related to different geographical locations used for the studies. It means that the locations that the students accessed for the online learning also played a vital role in determining whether the internet connectivity could help them in online learning or not.

According to Kapasia et al (2020), the Zoom app, Team link, YouTube live, Skype, Google meets/hangouts, Google classroom, WhatsApp, and other platforms were utilised by students for e-learning and study material sharing and learning evaluation. The majority of respondents used the Zoom app, 34.2%, to attend online classes or e-lectures, followed by Google Classroom 33.4% and YouTube live 33.4%. During the lockout, the students also visited other websites to obtain study materials. Due to a lack of internet connectivity, students were more likely to learn through sharing study resources rather than watching online lectures. Many of the respondents, 39.4%, used WhatsApp groups to acquire study materials from lecturers and friends, while 31.8% of students using Google Classroom. However, fewer students used institutions' and lecturers' websites and YouTube channels to get study materials. Lecturers employed a variety of platforms, including WhatsApp groups, Google classroom, Google forms, Microsoft Kaizala, and others, not only for digital teaching and learning but also for learning evaluation. Respondents' learning was primarily rated via WhatsApp group at 40.5%, followed by Google classroom at 24.9%. Additionally, a Google form 8% assessed students' learning state.

Meanwhile, Dhawan's (2020) study found that protecting digital access is critical in this challenging time. Some students cannot use all digital devices, the internet, or Wi-Fi. Lack of appropriate digital tools, no internet connections, or weak Wi-Fi connections can pose many issues, causing many students to miss out on online learning opportunities. This study showed

that some students still did not possess a stable internet connection to pursue their studies through online learning. These problems and issues would affect the quality of their study and directly affect their satisfaction during their learning. The students faced many difficulties in understanding what they were learning when internet connection problems occurred during online learning. Institutions should guarantee that each student gets access to the necessary resources during online learning. Academic institutions can create a step-by-step guide to teach lecturers, and students how to access and utilise various e-learning tools, as well as how to cover significant curricular subjects using these technologies, therefore can minimise the internet connection or accessibility issues.

According to Rahardjo et al (2016), students' capacity to access the internet was pretty good, and their awareness and willingness to use these media was high, but their ability to access the internet was still in the middle. It means that the students can access the internet connection during online learning, but the capability of the students to access the excellent quality internet was moderate. It was revealed that students' internet communication with other people was relatively low, while students' ability to exploit information on the university website was moderate. The availability of internet services is often insufficient. This study showed that internet services gave students many problems accessing online classes or learning. Students had sufficient knowledge to access the internet and agreed to do so, but they lacked the necessary skills. The students also could use the internet to find information, but the internet connection was the problem.

A study by Muthuprasad et al (2021) indicated that a lack of connectivity, which was internet problems, was ranked as the most significant impediment to online learning. The situation was significantly worse for individuals from urban or remote locations. The findings emphasized that India's digital gap and lack of fairness in access to continuous internet is the one that causes lots of problems for many students to proceed with education in online learning. The second and third restraints were data limit and speed, both caused by internet infrastructure limitations. These data showed that if a country wishes to go toward online education, it must first improve its internet infrastructure.

Along with the issues described above, the lack of traditional methods of direct connection in classrooms was a crucial worry in delivering online classes. The study also mentioned that the most significant obstacle cited by participants was technological limits. Concerns about technology limits were expressed in all the responses. Some students could not participate in online classes due to a lack of internet connection, which could sometimes be very challenging to access course material and resources. Online education will only be successful if internet access is available to everybody by making it equitable and inexpensive.

According to a study by Al-Amin et al (2021), the findings indicated that students were equipped with a gadget to participate in online learning. However, according to the results of this study, students required a stable and solid internet connection. Furthermore, many students did not have a consistent internet connection. The two leading causes of the irregularity problems were an inconsistent internet connection and a lack of electricity. Half of the students faced difficulties participating in online classes due to internet and device issues. This later will make the students feel burdened to study as the internet connection make them hard to understand the content of their study through an online class. The

government and policymakers should discuss together and develop a good plan and strategy to counter the internet connections problem to settle this issue and, simultaneously, help all students achieve satisfaction through online learning. This also can help all students to access stable and prevent unstable connections from occurring during online learning. According to Wijaya et al (2020), the internet connection is one of the aspects that influence this online learning in West Java. The coronavirus epidemic has affected all sectors, especially education, forcing all education sectors to conduct education matters through online platforms. Students have expressed concerns about the environment and the internet connection, which cannot support online learning wisely. According to the instructors interviewed, online learning is not easy because it requires a lot of preparation and an internet connection, which are one of the aspects that influence successful online learning during the epidemic of the coronavirus. The authors suggest that future studies can use this data to create learning media that can overcome the problems mentioned above, such as learning media that do not require a lot of internet connection and effective learning media even though students do not go to school to study. The suggestions mentioned are constructive in the future to help all students in need.

According to Allo (2020), students thoroughly appreciated the online lecture. However, the issue is with Internet access. The issue is the availability of an Internet network as well as the financial ability of various students. Anyone can afford an Internet data bundle, and some cannot afford it at all. Students look forward to online seminars on free applications such as Messenger. This is based on their financial ability, and Internet access is difficult due to their home's geographical state, making it tough to obtain telephone communication networks, SMS, and the Internet. They thought it was a fantastic idea for instructors to organise study groups via Messenger so that people without Internet data packages could acquire information. Another scenario is a learner who lives in a boarding house and works while in college but loses a job because Corona wants to buy a data credits Internet package too hard. In light of the availability of internet access, the current study reveals that while individual assignments are preferable to keep the gap physically due to the pandemic, they require group tasks to assist friends who do not have an internet pulse and access. This shows that the pandemic coronavirus makes it hard for the students to study as they need assistance from other students to continue their studies during the pandemic. These facts lead to the creation of the following hypotheses:

H_o: There is no significant relationship between accessibility and undergraduate students' readiness for online learning.
H_a: There is a relationship between accessibility and undergraduate students' readiness for online learning.

Communication

According to Mutalib et al (2016), communication was described as a straight effect that could affect students, lecturers, and material that promotes students' achievement. Communication in education is crucial as it becomes a sort of encouragement for students to engage in online learning. Communication has been recognised as one of the crucial aspects of online learning. Besides that, communication becomes a sense of connection with others. Communication helps students to learn better as well as brings them comfort. It also helped motivate them to actively engage in online learning and prepare for the upcoming lesson.

Furthermore, communication helped them understand more clearly by asking their friends or consulting with their lecturer. Thus, it described that communication is a fundamental element that must exist to ease the learning process.

A study by Alenezi (2020) revealed that lack of communication would hinder students' readiness for online learning. Traditional learning methods enable good communication between students and students and between students and lecturers since there are no boundaries between them. However, communication is problematic in online learning since there is a lack of physical contact and face-to-face communication compared to traditional learning methods. Hence, it could hinder the learning process in which students tend to feel isolated since the online learning environment separates them physically. It was shown that students might not always be capable of identifying and understanding their educational requirements without the help of others. They depended on their friends, especially lecturers, to get to know something more clearly. For example, if they did not understand a specific lesson, they could easily ask their friends or their lecturer for the respective subject. Hence, it could be said that communication is a fundamental element that must exist to ease the students.

On the other hand, in a study by Martin et al (2020), the last component that academics had identified as critical to online learning readiness is course communication. Communication and readiness for online learning were shown to be favourably related. Communication between students and lecturers is vital to ensure the effectiveness and efficient delivery of the lesson. Lecturers and students could communicate more easily in online classrooms thanks to various asynchronous and synchronous communication technologies. With many online tools, students and lecturers could foster good communication between them. They could communicate anytime and anywhere on a specific lesson. For example, students could use emails and forums to discuss their lessons.

Furthermore, the advancement of technology helps to create other communication tools such as Facebook. Facebook contains interactive dialogue, interactions, and groups, enabling people to become information recipients and broadcasters (Raza et al., 2020). Facebook allowed their user to create a group where discussions could be held; thus, it provided the opportunity for lecturers to create a group class with their students. Thus, communication in online learning was not a big problem since many platforms were available. In brief, this study proved that online communication and preparedness for online learning are related.

Yilmaz (2017), in his study, had identified that self-efficacy in online communication is one of the six subscales of e-learning readiness. Self-efficacy in online communication is linked to how well a student handles the communication in the online learning environment. There are two aspects of communication in an online learning environment: student and student and lecturer. Communication between student and student is vital to sharing, developing, and exchanging knowledge. On the other hand, communication with the lecturer was crucial due to obtaining the lesson and submitting relevant learning materials. The concept of online learning is derived from distance education; thus, communication is something that could become an obstacle for the student. Therefore, a student should have the responsibility to develop a great online communication ability and should not rely on the practice of spoon-

feeding. The students who can effectively communicate in online learning were more likely to be successful than the others.

Hao (2016), in his study, has found that the element of self-efficacy communication in the class had the second-lowest levels of preparedness for online learning. It was believed that the student was getting used to lecturer-centred communication. Online learning somehow eliminated this type of communication, thus making students lack confidence in communicating with the lecturer, especially the lecturer they had never gotten to know before. For example, the students felt less confident in engaging with the lesson in the online learning class. They tend to stay quiet even though they do not understand in the class. Furthermore, this study proved that owning a cell phone could corrode communication skills. This might be because the hours they spent on their phones reduced the amount of time they interacted with people, influencing their communication in class. A preventive measure must be undertaken before the students enrol in online learning. Such measures are scaffolding, in-class communication, or a slow progressive discipline process. These measures aimed to enable excellent communication skills of the students, thus enabling them to get ready for online learning.

Referring to a study by Kirmizi (2015), self-efficacy in online communication is the final essential sub-dimension of online learner preparedness. The data in this study are obtained from 84 students at Karabuk University that enrolled in the English Language and Literature Department. The study conducted an online learning readiness scale. Based on the data collected, most participants could communicate effectively during online learning. As many as 72.6% agreed that they could use the online platform effectively in communicating with their friends and lecturers, and only 7.2% did not agree with that statement. While 20.2%, which was 17 students, were undecided. Besides that, of the total respondent, 58.4% were confident in sharing questions during discussion, 32.1% were undecided, and the remaining 9.5% disagreed. Introvert students are likely to engage more in online communication in online learning than in traditional learning. In short, this data proved that the participants had a high degree of self-efficacy in communicating online, which is an essential ability for online learning students.

According to Chung et al (2020), communication was one of the critical determinants for students' online learning readiness. Due to the lack of face-to-face communication between lecturer and student, they may only engage with their lecturer and other classmates via online communication. Because of that, online communication must take place to foster a good delivery of information. Not only that, but students also need to reflect on what they had learned by asking, posting, and communicating with others, especially with their lecturer, in order to ensure all the lessons are well understood. Without communication, it can affect their emotion since they are on their own. Hence, effective communication must ensure that students are not left behind. Communication self-efficacy was the lowest in this study compared to the other dimension. Although they are comfortable utilising internet technologies to interact with people and express their opinions, they rarely participate in online discussions. Hence, this study proved that students are not quite ready for online learning.

In a study by (Tang et al., 2021), self-efficacy in online learning refers to students' ability to create personal and meaningful interactions. It includes establishing excellent communication

between classmates during discussions with the lecturer, classmates, and lecture sessions. Online communication is becoming increasingly important for students because it helps them achieve their goals more successfully. For example, they gathered information, completed assignments, maintained social contacts, and engaged in interactive conversations. In this study, 913 students participated, and the result varied between genders. The result showed that female students are better at communication than male students. This was due to female students finding online learning attractive, and they preferred to use written communication over spoken communication. These facts lead to the creation of the following hypotheses:

H_o: There is no significant relationship between communication learning and undergraduate students' readiness for online learning.
H_a: There is a relationship between communication and undergraduate students' readiness for online learning.

Motivation

According to Esra and Sevilen (2021), motivation can be described as the first condition to take on a learning task, and motivation also could be considered the engine that powers the process. Motivation was essential to students in online learning as it could act as the engine that makes or drive students to continue studying during online learning. Motivation is also essential as the student needs to take on the learning task of motivation first, not the other thing in the first place. Then, it could be concluded that online learning expressed many barriers to maintaining students' motivation to pursue their learning goals, and decision-makers should consider the factors that influence learners' motivation when designing online courses (Esra and Sevilen, 2021). This means that students' motivation is shallow during online learning as online learning creates many challenges and barriers that directly affect the students' motivation. Several aspects have been proposed to interact with online learning motivation to resolve attrition and participation issues. Students' motivation suffers when they skip classes or do not participate in activities. This means that motivation was essential and crucial that could influence students' readiness during online learning.

According to a study by Adnan and Anwar (2020), the majority of the students amounting to 71.4%, reported that learning in the conventional classroom was more motivating than distance learning. This is mainly because students usually would actively participate in academic activities in traditional classes due to their face-to-face engagement with the instructor and class fellows. This showed that students felt demotivated when they continued their studies through online classes or learning. This made them feel lazy to learn as there was no engagement with the instructor and classmates. Not to mention that students also felt it was complicated to conduct a discussion with their team members as the online learning demotivated them. This later would make them feel stressed to continue their study through online learning. Students also felt very hard to conduct study group sessions through online learning.

In a study by Harandi (2015), the findings revealed that e-learning and student motivation had a tangible link. This link was essential in order to prove that e-learning could make students more motivated. This means that by using e-learning, the students showed positive feedback by had more motivation when their lecturers used online learning in their study. This study showed that applying e-learning will directly improve students' motivation in their studies. At

the same time, all readers would know that e-learning or online learning must be included in study styles. This study found a strong link between e-learning and student motivation, which later indicated that when e-learning was used and practiced in the education system, students were more likely to be motivated.

According to Putra (2021), the student's motivation to learn English rose. Students' attendance in class, participation in learning, eagerness to gather and complete the assignment, and the average score in crafting a short sentence all indicated increased motivation. This study proved that practicing online learning increased students' motivation. After conducting online learning through the google meet application, the student's attendance in class increased significantly and made them feel more motivated to study their English through online learning. Then, online learning also made the students' participation during class increased. Students tend to give more cooperation and communication during their online learning, proving that online learning in this study significantly increased students' motivation. After that, through online learning, the students also felt more eager and excited to complete the assessment given to them. This is because they felt more motivated during their learning, making them understand what they learned and eager to complete their assessment. From this study, we could see that all the mentioned impacts were proof that the online learning through the google meet application that been conducted in this study has managed and successfully increased the students' motivation in their online learning.

According to a study by Lin et al (2017), another answer could be found in the current study's peculiar online-language-learning setting that has been conducted. According to descriptive statistics, the average intrinsic motivation of the participants was moderate, and their average extrinsic motivation was much lower than expected. This reflected the reality that neither intrinsic nor extrinsic motivation was at a high level. This study showed that the online learning that has been conducted current days is not reliable, and at the same time, online learning lowers students' motivation, both intrinsic and extrinsic. This would make the students feel demotivated and lazy to continue their studies in online learning. Students also would feel stressed every time they learn through online classes. Students must prepare many things to feel more motivated during online learning. Students also should be careful to prevent demotivation occurred to them. Demotivation could affect their study, which will make them feel stressed and burdened to continue their studies.

In addition, according to a study by Eom and Ashill (2016), the motivation construct was separated into intrinsic and extrinsic motivation in the current online learning study. According to the findings, intrinsic student motivation has no significant relationship with user satisfaction but has a substantial positive relationship with learning outcomes. Extrinsic student motivation did not affect either user satisfaction or learning outcomes. The findings from the study concluded that there were two types of motivation for the students: intrinsic and extrinsic motivation. Intrinsic motivation comes from within individuals. It can be defined as whenever individuals engage in behaviour that rewards them. Those individuals were doing something for the sake of themselves rather than for the sake of an external gain. The activity itself was a reward in and of itself. For extrinsic motivation, any identities or individuals were motivated to act or engage in an activity because they wanted to earn a reward or avoid punishment. Those individuals would engage in an activity not because they loved it or found

it rewarding but because they expected something in return or wanted to avoid something unpleasant.

According to Hadef (2021), the study's findings revealed that students prefer the authentic traditional mode of learning over the unsatisfactory encountered virtual learning, including a harmful degree of motivation that was, sadly, lowered in the e-learning process. Then, e-learning should be used with caution and vigilance, and its pedagogies should be expanded and developed further. Motivation is essential as it refers to how students learn. Effective instruction or education is the consequence of well-supported motivation, and the more motivated a student is, the better their outcome will be. Nonetheless, motivation is changeable and can be influenced by various variables, both positively and adversely. One of these aspects that determines the learner's degree of motivation is e-learning. According to the quantitative survey findings, respondents regard conventional learning as irreplaceable and virtual learning as insufficient and inappropriate for job fulfilment. As a result, the deployment of online learning has a detrimental impact on motivation, which has been reduced during the e-learning process.

Nonetheless, uploaded presentations downloaded on the faculty platform diminish students' determination, motivation, and willingness to learn effectively, exchange ideas and information, share and build knowledge, and interact directly in an authentic environment. The lack of lecturers-student interaction in e-learning prevents. As a result, the transition to online learning is not well-possessed or fully grasped, not to mention the category of lecturers and students who do not even know how to deal with online learning platforms effectively. In this approach, greater emphasis should be placed on the delivery of the e-learning mode, and pedagogies should be updated and reformed.

According to Harahap et al (2021), the study's results indicate that learning satisfaction directly impacts learning motivation. The implementation of online learning and distance learning is nearly identical. The difference in online learning during the Covid-19 period has used various platforms such as Google Classroom, Google Meet, Zoom, Microsoft Teams, and various other online learning applications. This is a manifestation of the era of the industrial revolution 4.0 in the field of learning today, more authentic in front of us so that it impacts humans in the future. Introducing this hybrid learning approach elicits a wide range of reactions among Indonesian students and instructors. To succeed in its execution, this hybrid learning paradigm requires every student to comprehend the theory and practice it. As a result, we require motivation within ourselves to be able to translate the conditions that arise. Changes in the online learning paradigm among students and students must be examined regularly for its implementation to become more effective and efficient. This is supported by relevant references indicating that online learning can bring learning satisfaction to students who respond to it with solid competence and motivation so that the deployment of online learning becomes typical in the future. The consequences of this study in terms of identifying numerous factors to consider when implementing online learning in rural and urban locations are strongly backed by the correct technology, making online learning a simple success. These facts lead to the creation of the following hypotheses:

H_o: There is no significant relationship between motivation and undergraduate students' readiness for online learning.

H_a: There is a relationship between motivation and undergraduate students' readiness for online learning.

Self-Directed Learning

According to a study by Alenezi (2020), self-directed learning is crucial to assessing students' readiness for online learning. It was best described as the students' capabilities to study only by themselves. The study revealed that self-directed learning was aided by technology, which increases learners' confidence and flexibility to learn at their speed. The existence of many online platforms would help the students to adapt to the online learning environment. Since online learning forces students to be independent, they must acquire self-directed learning skills. In his study, Online Learning Readiness Skills (OLRS) was developed to assess the 340 students from Northern Border University. The questionnaires were answered, and the data was collected to determine their readiness level for online learning. The result showed that female students were highly self-directed compared to male students. In the aftermath, the study found that the students had a high level of readiness in self-directed learning compared to self-efficacy in online communication. Hence, this study proved that self-directed learning was one of the crucial aspects to be developed by the students in order for them to become ready for the online learning environment.

In the study by Yilmaz (2017), self-directed learning was one of the criteria for the online-learning readiness scale. Self-directed learning was described as the capacity of the student to participate and adapt to the online learning environment and the learning activities on their own. Self-directed learning was crucial for online courses throughout the process. The study was carried out by 236 undergraduate computing I students at a state university. Eight items were developed to assess the perception of self-directed learning of the students. The study's findings revealed that the more self-directed learning skills a student possessed, the more satisfied and motivated he was. Students who were unable to be self-directed in learning were likely to become unsure of doing anything in completing the course online requirement. They also tend to be confused and likely feel isolated from others.

On the other hand, in a study by Kirmizi (2015), self-directed learning appears to be the most crucial determinant of success. The study was conducted to know students' self-perception of online learning in the context of readiness. Self-directed learning emphasises the ability of students to fully participate in their learning environment to achieve their goals. Thus, the study involved 84 English Language and Literature Department students. The data was collected as in the previous study by Alenezi (2020), in which OLRS was applied to measure the students' readiness. Several sets of questionnaires were developed, such as whether the students could carry out their study plan. The result obtained from the study found that most of the students could carry out their study plan, which recorded 69.1% of the total participants. Other than that, as many as 64.2% were able to set their learning objectives. The study revealed that participants could follow their study plan and had high expectations of their learning in the aspect of self-directed learning. Therefore, it could be concluded that students who take online learning competent in self-directed learning.

As per Hao (2016), students who were not prepared for self-directed learning might have struggled to keep up with the rest of the class. Based on the findings, the second-highest aspect of readiness was self-directed learning. However, first-year students stated they were

not accustomed to taking charge of their studies. The study suggested that lecturers must provide educational opportunities for their students to acquire self-directed learning abilities and a predisposition for group work which both can help students achieve higher levels of preparedness. Other than that, students should acknowledge the flipped classroom's advantages to get along with the learning environment and be prepared for anything afterward. The study also suggested that lecturers should give students suggestions and advice to help them develop their self-directed learning.

In the study by Topal (2016), students' satisfaction may be used to evaluate their performance in a distant learning course. Self-directed learning is closely related to students' satisfaction. The findings showed a strong positive correlation between students' satisfaction levels and their readiness for online learning. The study found that self-directed students were more motivated and could manage their learning. Furthermore, they could obtain and process information with a specific goal. The study was carried out to measure the readiness level of 414 students from Kocaeli University. These students were selected as they had at least completed one online course. The findings showed that the students had a high satisfaction rate of over 74%. This indicated that they could be self-directed in the learning process. Hence, it could be concluded that they were prepared for online learning.

In the study conducted by Karatas and Arpaci (2021), the significance of self-directed learning capabilities in predicting preparedness for online learning was investigated in this study. The study indicated that there was a significant positive correlation between self-directed learning and readiness for online learning. Self-directed learning was the concept in which the student could handle the learning process independently. Besides that, this skill is vital in online learning since students are on their own throughout their online study. Therefore, students without the ability to self-directed learning would likely face difficulties. Usually, self-directed students were more active in online learning activities such as group discussion, engagement in class, and studying and revising learning materials than the other students. In addition, students who developed self-directed learning abilities and achieved meta-cognitive awareness would enhance their autonomy in learning and boost intrinsic motivation. The study's findings showed that ability in self-directed learning positively reflects the readiness of the students for online learning. In conclusion, self-directed learning skills strongly predicted online learning readiness among students.

In a study by Chung et al (2020), self-directed learning was one of the dimensions to measure online readiness. As a learning paradigm, self-directed learning encourages self-control in the learning process and gives space and chances for the student to engage with individuals outside of the classroom to achieve the learning goal. The desire for learning and self-control were among the key construct of self-directed learning. Based on the study, about 399 responses had collected from 435 undergraduate students. The results showed that they faced many problems that hindered them from self-directed online learning. One of them was that they were challenging to stay focused due to distractions from their surroundings. Hence, this study proves that some of them were not ready for online learning due to being unable to be self-directed in learning online.

Last but not least, according to a study by Tang et al (2021), self-directed learning is a learning technique that allows students to control their learning process by assessing learning

requirements, setting learning goals, implementing learning strategies, and assessing learning performance and outcomes. A self-directed student was able to find knowledge or other resources independently. One of the critical determinants of whether students can be self-directed in learning is that students have genuine influence over most decisions in learning. Based on this study, self-directed learning was used as a scale to measure readiness for online learning. The result showed significant differences in genders, and self-directed learning for the male student was moderate. These proved that not all students have the same capabilities in self-directed learning. These facts lead to the creation of the following hypotheses:

H_o: There is no significant relationship between self-directed learning and undergraduate students' readiness for online learning.
H_a: There is a relationship between self-directed learning and undergraduate students' readiness for online learning.

Based on the discussion above, the following conceptual framework is developed (Figure 1).

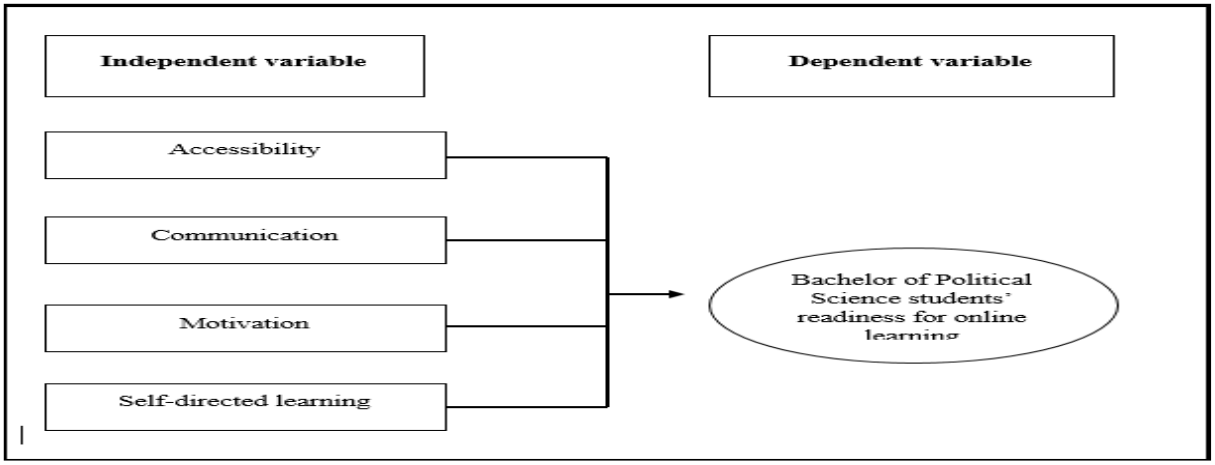

Figure 1: Conceptual Framework on factors influencing the students' readiness for online learning

Research Methodology

This study involved 86 (out of 103) final-year undergraduate students from Higher Learning Institution X in Selangor, Malaysia. This study applied the observational study design in which cross-sectional surveys, i.e. census, were carried out through an online questionnaire within a month in December 2021 using the WhatsApp application. There are five sections in the questionnaire. Section A covers the background of the respondents. Next, Section B addresses students' readiness for online learning. Section C addresses accessibility, communication, motivation, and self-directed learning towards online learning. All items in Sections A, B, and C used the Likert Scale with five options. The data were collected and examined using the Statistical Package for the Social Science (SPSS) version 26. The researchers used the descriptive analysis to gauge and overview the students' characteristics. Besides, Pearson Correlation Coefficient Analysis and Multiple Regression Analysis test the hypotheses mentioned in the next section of this paper.

Findings and Results

As mentioned previously, 86 final-year undergraduate students participated in this study by answering the questionnaire distributed online. The following are the demographic profile of the respondents.

Table 1
Demographic Profile of the Respondents

NO.	ITEM	FREQUENCY	PERCENTAGE (%)
1.	Gender - Male - Female	37 49	43 57
2.	Previous academic achievement. - 2.00-2.49 - 2.49-2.99 - 3.00-3.49 - 3.50-4.00	0 8 42 36	0 9.3 48.8 41.9
3.	University entry requirement. - Foundation - Matriculation - Diploma - STPM	30 12 38 6	34.8 14 44.2 7
4.	Current semester. - Semester 7 - Semester 8	49 37	57 43
5.	State the place you conducted your online learning. - At campus - At home	20 66	23.3 76.7

The result generated in Table 1 describes the demographic of the respondents. The table informed that the total number of respondents answered the questionnaire is 86 persons. First, the tables indicate the gender of the respondents which is the majority of the respondents from Female 57% (49 respondents), followed by Male, 47% (37 respondents).

Apart from that, the table also discusses the previous academic achievement. The majority of the respondent comes with a previous academic achievement from 3.00-3.49, which amounted to 48.8% (42 respondents). Then, it is followed by 3.50-4.00 which amounted 41.9% (36 respondents), 2.49-2.99 amounted 9.3% (8 respondents) and 2.00-2.49 which is 0% (0 respondents).

In addition to that, in that particular year, this institution's entry requirement is dominated by Diploma with 44.2% (38 respondents) then, followed by Foundation with 34.8% (30 respondents), Matriculation with 14% (12 respondents) and STPM with 7% (6 respondents).

Next, the table also discusses the current semester, which the majority is from Semester 7 with 49 persons (57%), followed by Semester 8 with 37 persons (43%). Apart from that, the

table also describes the place student's conduct online learning. Most students have conducted their online learning at Home with 76.7% (66 respondents), followed on Campus by 23.2% (20 respondents).

Table 2
Descriptive Analysis of student's readiness for online learning

Statements	**Mean**
I can direct my own learning progress even though in learning online	4.23
I am ready to participate in online learning.	4.43
I think physical class and online class is the same.	3.59
I think online learning is beneficial to students.	4.16
I am willing to dedicate the necessary time per week for my studies.	4.20
I can handle any obstacles during online learning.	4.27
I can cope with online learning schedule.	4.26
I am able to learn at afar from friends during online learning.	4.29
I prefer to learn online than physical learning method.	4.10

Table 2 shows the result of descriptive statistics for Higher Learning Institution X students' readiness for online learning. According to it, the highest mean value is 4.43 for the statement "I am ready to participate in online learning". After that, it was followed by the "I can learn at afar from friends during online learning" with a mean value of 4.29.

Next, the statement "I can handle any obstacles during online learning" recorded the third-highest mean value of 4.27. Other than that, "I can cope with online learning" has the mean value of 4.26" is followed by the statement "I can direct my learning progress even though learning online" that has the mean value of 4.23. Besides that, the statement of "I am willing to dedicate the necessary time per week for my studies" recorded 4.20 for mean value.

Then, the statement "I think online learning is beneficial to students" has a mean value of 4.16. The second-lowest mean value clearly stated in the Table 2 is 4.10 with the statement "I prefer to learn online than physical learning method, followed by the statement "I think physical class and an online class" is the same with the mean value of 3.59. Thus, all the means values in the Table can be an average level as most of the mean value is 4.17.

Examining the relationship between accessibility and undergraduate students' readiness for online learning at Higher Learning Institution X.

H_o: There is no significant relationship between accessibility and undergraduate students' readiness for online learning.
H_a: There is a relationship between accessibility and undergraduate students' readiness for online learning.

Table 3
Result of Pearson Correlation between accessibility and undergraduate students' readiness for online learning at Higher Learning Institution X

Variables	R-Value	P-Value	Decision
Accessibility	0.649	0.000 ($p<0.05$)	H_a is accepted

Table 3 stated that the relationship between accessibility and undergraduate students' readiness for online learning at Higher Learning Institution X has a high positive correlation. The outcome can be inferred that there is a connection between accessibility and undergraduate students' readiness for online learning at Higher Learning Institution X since $r=0.649$ and $p<0.05$. Hence, there is a significant relationship between accessibility and undergraduate students' readiness for online learning at Higher Learning Institution X. Therefore, H_a is accepted.

Examining the relationship between communication and undergraduate students' readiness for online learning at Higher Learning Institution X.

H_o: There is no significant relationship between communication learning and undergraduate students' readiness for online learning.

H_a: There is a relationship between communication and undergraduate students' readiness for online learning.

Table 4
Result of Pearson Correlation between communication and undergraduate students' readiness for online learning at Higher Learning Institution X

Variables	R-Value	P-Value	Decision
Communication	0.657	0.000 ($p<0.05$)	H_a is accepted

Table 4 illustrates that the relationship between communication and undergraduate students' readiness for online learning at Higher Learning Institution X has a high positive correlation. The outcome can be inferred that there is a connection between communication and undergraduate students' readiness for online learning at Higher Learning Institution X since $r=0.657$ and $p<0.05$. Hence, there is a significant relationship between communication and undergraduate students' readiness for online learning at Higher Learning Institution X. Therefore, H_a is accepted.

Examining the relationship between motivation and undergraduate students' readiness for online learning at Higher Learning Institution X.

H_o: There is no significant relationship between motivation and undergraduate students' readiness for online learning.

H_a: There is a relationship between motivation and undergraduate students' readiness for online learning.

Table 5
Result of Pearson Correlation between motivation and Undergraduate students' readiness for online learning at Higher Learning Institution X

Variables	R-Value	P-Value	Decision
Motivation	0.700	0.000 ($p<0.05$)	H_a is accepted

Table 5 shows that the relationship between motivation and undergraduate students' readiness for online learning at Higher Learning Institution X has a high positive correlation. The outcome can be inferred that there is a connection between motivation and undergraduate students' readiness for online learning at Higher Learning Institution X since $r=0.700$ and $p<0.05$. Hence, there is a significant relationship between motivation and undergraduate students' readiness for online learning at Higher Learning Institution X. Therefore, H_a is accepted.

Examining the relationship between self-directed learning and undergraduate students' readiness for online learning at Higher Learning Institution X.

H_o: There is no significant relationship between self-directed learning and undergraduate students' readiness for online learning.
H_a: There is a relationship between self-directed learning and undergraduate students' readiness for online learning.

Table 6
Result of Pearson Correlation between self-directed learning and undergraduate students' readiness for online learning at Higher Learning Institution X

Variables	R-Value	P-Value	Decision
Self-Directed Learning	0.698	0.000 ($p<0.05$)	H_a is accepted

Table 6 discusses the relationship between self-directed learning and Undergraduate students' readiness for online learning at Higher Learning Institution X has a high positive correlation. The outcome can be inferred that there is a connection between self-directed learning and Undergraduate students' readiness for online learning at Higher Learning Institution X since $r=0.649$ and $p<0.05$. Hence, there is a significant relationship between self-directed learning and undergraduate students' readiness for online learning at Higher Learning Institution X. Therefore, H_a is accepted.

Table 7
Multiple Regression Analysis for dominant factors that contribute to undergraduate students' readiness for online learning

Variables	Unstandardized Beta	Standardize Beta	t- Value	P- Value	Decision
Accessibility	0.425	0.283	2.533	0.013	Based on the Beta value, **motivation** is the most influential factor.
Communication	0.067	0.52	0.384	0.702	
Motivation	**0.426**	**0.345**	**2.442**	**0.017**	
Self-Directed Learning	0.214	0.173	1.1511	0.253	
R square	0.580				
F value =	27.953				
P value =	0.000				

Table 7 states that accessibility, communication, motivation and self-directed learning affect the students' readiness for online learning. According to the result, 58% of online learning effectiveness can be explained by all the independent variables, while another factor can explain the remaining 42%. Besides, motivation is the most influential factor in undergraduate students' readiness for online learning at the higher learning institution, as suggested by the P value= of 0.017, P<0.05, and beta value of 0.426. Compared to the other independent variables, the beta value for motivation is closer than 1. The other independent variables are accessibility, communication and self-directed learning, having the beta values of 0.425, 0.067 and 0.214, respectively. Other than that, two independent variables have no significant relationship with the undergraduate students' readiness for online learning at the Higher Learning Institution X since their p-value is more significant than 0.05. These two independent variables are communication and self-directed learning, which have the p-value of 0.702 and 0.253, respectively.

Conclusion

In conclusion, the study on influencing factors towards undergraduate students' online learning readiness is timely and significant as Covid-19 has forced universities to switch from traditional learning to online learning methods. Since it was no longer an option, all learning institutions in Malaysia had come out with a circular regarding implementing online distance learning. Due to that, it is crucial to determine the main factor contributing to the effectiveness of online learning, especially in tertiary education. Therefore, this study identified the motivation factor as the most influential factor in influencing the undergraduate student's readiness for online learning at this Higher Learning Institution X in Selangor, Malaysia, compared to the other three factors, i.e., accessibility, communication, and self-directed learning. The motivation factor is influential because intrinsic motivation is essential in inspiring the students throughout the online learning process, compared with extrinsic motivation. Schedules for classes play an essential part in extrinsic motivation during online learning. This situation is because online classes can sometimes be tiresome, causing

students to browse social media or play games until the session ends. Finally, social media and online gaming erode student motivation, impairing concentration and engagement during online classes. At the same time, the level of motivation amongst undergraduate students will be gradually dropped.

Therefore, several fundamental recommendations have been introduced in this study to overcome the limitations and obtain a better result for future research on online learning. These recommendations would also be helpful to the Malaysia Ministry of Higher Education, policymakers, and lecturers. This study has only been done on undergraduate students in the Higher Learning Institution X. Thus, for future research, it is suggested that the study should be extended to all higher learning institutions in Malaysia for better generalisation. Moreover, a comparison study between public and private higher learning institutions should be done to determine the most influential factors for a sound online learning system in Malaysia. In the future, it is hoped that other studies can identify the factors influencing undergraduate students' readiness for effective online learning.

Conflict of Interest

There is no conflict of interest regarding publication and the authorship of this research.

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